

Lev Vygotsky on Jean Piaget

I

PSYCHOLOGY owes a great deal to Jean Piaget. It is not an exaggeration to say that he revolutionized the study of child language and thought. He developed the clinical method of exploring children's ideas which has since been widely used. He was the first to investigate child perception and logic systematically; moreover, he brought to his subject a fresh approach of unusual amplitude and boldness. Instead of listing the deficiencies of child reasoning compared with that of adults, Piaget concentrated on the distinctive characteristics of child thought, on what the child *has* rather than on what the child lacks. Through this positive approach he demonstrated that the difference between child and adult thinking was *qualitative* rather than quantitative.

Like many another great discovery, Piaget's idea is simple to the point of seeming self-evident. It had already been expressed in the words of Rousseau, which Piaget himself quoted, that a child is not a miniature adult and his mind not the mind of an adult on a small scale. Behind this truth, for which Piaget provided experimental proof, stands another simple idea the idea of evolution, which suffuses all of Piaget's studies with a brilliant light.

For all its greatness, however, Piaget's work suffers from the duality common to all the path-finding contemporary works in psychology. This cleavage is a concomitant of the crisis that psychology is undergoing as it develops into a science in the true sense of the word. The crisis stems from the sharp contradiction between the factual material of science and its methodological and theoretical premises, which have long been a subject of dispute between materialistic and idealistic world conceptions. The struggle is perhaps more acute in psychology than in any other discipline.

As long as we lack a generally accepted system incorporating all the available psychological knowledge, any important factual discovery inevitably leads to the creation of a new theory to fit the newly observed facts. Freud, Lévy-Bruhl, Blondel, each created his own system of psychology. The prevailing duality is reflected in the incongruity between these theoretical structures, with their metaphysical, idealistic overtones, and the empiric bases on which they are erected. In modern psychology great discoveries are made daily, only to be shrouded in *ad hoc* theories, prescientific and semi-metaphysical.

Piaget tries to escape this fatal duality by sticking to facts. He deliberately avoids generalizing even in his own field and is especially careful not to step over into the related realms of logic, of the theory of cognition, or of the history of philosophy. Pure empiricism seems to him the only safe ground. His book, he writes, is

first and foremost a collection of facts and documents. The bonds uniting the various chapters are those that a single method can give to diverse findings – by no means those of systematic exposition [*Language and Thought in the Child* p. 1].

Indeed, his forte is the unearthing of new facts, their painstaking analysis, their classification – the ability, as Claparède puts it, to listen to their message. An avalanche of facts, great and small, opening up new vistas or adding to previous knowledge, tumbles down on child psychology from the pages of Piaget. His clinical method proves a truly invaluable tool for studying the complex structural wholes of child thought in its evolutionary transformations. It unifies his diverse investigations and gives us coherent, detailed, real-life pictures of child thinking.

The new facts and the new method led to many problems, some entirely new to scientific psychology, others appearing in a new light. Problems gave birth to theories, in spite of Piaget's determination to avoid them by closely following the experimental facts and disregarding for the time being that the choice itself of experiments is determined by hypotheses. But facts are always examined in the light of some theory and therefore cannot be disentangled from philosophy. This is especially true of facts relative to thinking. To find the key to Piaget's rich store of data we must first explore the philosophy behind his search for facts – and behind their interpretation, which he presents only at the end of his second book [*Judgment and Reason in the Child*] in a resume of its contents.

Piaget approaches this task by raising the question of the objective interrelatedness of all the characteristic traits of child thinking he observed. Are these traits fortuitous and independent, or do they form an orderly whole, with a logic of its own, around some central, unifying fact? Piaget believes that they do. In answering the question, he passes from facts to theory, and incidentally shows how much his analysis of facts was influenced by theory, even though in his presentation the theory follows the findings.

According to Piaget, the bond uniting all the specific characteristics of child logic is the egocentrism of the child's thinking. To this core trait he relates all the other traits he found, such as intellectual realism, syncretism, and difficulty in understanding relations. He describes egocentrism as occupying an intermediate position, genetically, structurally, and functionally, between autistic and directed thought.

The idea of the polarity of directed and undirected thought is borrowed from psychoanalytical theory. Piaget says:

Directed thought is conscious, i.e., it pursues aims that are present in the mind of the thinker. It is intelligent, i.e., it is adapted to reality and strives to influence it. It is susceptible of truth and of error ... and it can be communicated through language. Autistic thought is subconscious, i.e., the goals it pursues and the problems it sets itself are not present in consciousness. It is not adapted to external reality but creates for itself a reality of imagination or dreams. It tends, not to establish truths, but to gratify wishes and remains strictly individual and incommunicable as such by means of language, since it operates primarily in images and must, in order to be communicated, resort to roundabout methods, evoking, by means of symbols and of myths, the feelings that guide it [*Language and Thought in the Child*, pp. 59-60].

Directed thought is social. As it develops, it is increasingly influenced by the laws of experience and of logic proper. Autistic thought, on the contrary, is individualistic and obeys a set of special laws of its own.

Between these two contrasting modes of thought

there are many varieties in regard to their degree of communicability. These intermediate varieties must obey a special logic, intermediate too between the logic of autism and the logic of intelligence. We propose to give the name of *egocentric thought* to the principal of these intermediate forms [*Language and Thought in the Child*, p. 62].

While its main function is still the satisfaction of personal needs, it already includes some mental adaptation, some of the reality orientation typical of the thought of adults. The egocentric thought of the child “stands midway between autism in the strict sense of the word and socialized thought” [*Judgment and Reason in the Child*, p. 276]. This is Piaget’s basic hypothesis.

It is important to note that throughout his work Piaget stresses the traits that egocentric thought has in common with autism rather than the traits that divide them. In the summary at the end of his book, he states emphatically: “Play, when all is said and done, is the supreme law of egocentric thought [*Judgment and Reason in the Child*, p. 323]. The same tendency is especially pronounced in his treatment of syncretism, even though he notes that the mechanism of syncretic thinking represents a transition from the logic of dreams to the logic of thought.

Piaget holds that egocentrism stands between extreme autism and the logic of reason chronologically as well as structurally and functionally. His conception of the development of thought is based on the premise taken from psychoanalysis that child thought is originally and naturally autistic and changes to realistic thought only

under long and sustained social pressure, this does not, Piaget points out, devalue the intelligence of the child. “Logical activity isn’t all there is to intelligence” [*Judgment and Reason in the Child*, p. 267]. Imagination is important for finding solutions to problems, but it does not take care of verification and proof, which the search for truth presupposes. The need to verify our thought – that is, the need for logical activity – arises late. This lag is to be expected, says Piaget, since thought begins to serve immediate satisfaction much earlier than to seek for truth; the most spontaneous form of thinking is play, or wishful imaginings that make the desired seem obtainable. Up to the age of seven or eight, play dominates in child thought to such an extent that it is very hard to tell deliberate invention from fantasy that the child believes to be the truth.

To sum up, autism is seen as the original, earliest form of thought; logic appears relatively late; and egocentric thought is the genetic link between them.

This conception, though never presented by Piaget in a coherent, systematic fashion, is the cornerstone of his whole theoretical edifice. True, he states more than once that the assumption of the intermediate nature of child thought is hypothetical, but he also says that this hypothesis is so close to common sense that it seems little more debatable to him than the fact itself of child egocentrism. He traces egocentrism to the nature of the practical activity of the child and to the late development of social attitudes.

Clearly, from the genetic point of view, one must start from the child’s activity in order to understand his thought; and his activity is unquestionably egocentric and egotistic. The social instinct in well-defined form develops late. The first critical period in this respect occurs toward the age of 7 or 8 [*Judgment and Reason in the Child*, p. 276].

Before this age, Piaget tends to see egocentrism as all-pervading. All the phenomena of child logic in their rich variety he considers directly or indirectly egocentric. Of syncretism, an important expression of egocentrism, he says unequivocally that it permeates the child’s entire thinking, both in the verbal and in the perceptual sphere. After seven or eight, when socialized thinking begins to take shape, the egocentric features do not suddenly vanish. They disappear from the child’s perceptual operations but remain crystallized in the more abstract area of purely verbal thought.

His conception of the prevalence of egocentrism in childhood leads Piaget to conclude that egocentrism of thought is so intimately related to the child’s psychic nature that it is impervious to experience. The influences to which adults subject the child

are not imprinted on him as on a photographic plate: They are “assimilated,” that is to say, deformed by the living being subjected to them and become

implanted in his own substance. It is this psychological substance of the child or, in other words, the structure and the functioning peculiar to child thought that we have endeavored to describe and, in a measure, to explain [*Judgment and Reason in the Child*, p. 338].

This passage epitomizes the nature of Piaget's basic assumptions and brings us to the general problem of social and biological uniformities in psychic development, to which we shall return in Section III. First, let us examine the soundness of Piaget's conception of child egocentrism in the light of the facts on which it is based.

II

Since Piaget's conception of child egocentrism is of primary significance in his theory, we must inquire what facts led him not only to accept it as a hypothesis but to put such great faith in it. We shall then test these facts by comparing them with the results of our own experiments.

The factual basis of Piaget's belief is provided by his investigation of the child's use of language. His systematic observations led him to conclude that all conversations of children fall into two groups, the egocentric and the socialized. The difference between them lies mainly in their functions. In egocentric speech, the child talks only about himself, takes no interest in his interlocutor, does not try to communicate, expects no answers, and often does not even care whether anyone listens to him. It is similar to a monologue in a play: The child is thinking aloud, keeping up a running accompaniment, as it were, to whatever he may be doing. In socialized speech, he does attempt an exchange with others – he begs, commands, threatens, conveys information, asks questions.

Piaget's experiments showed that by far the greater part of the preschool child's talk is egocentric. He found that from 44 to 47 per cent of the total recorded talk of children in their seventh year was egocentric in nature. This figure, he says, must be considerably increased in the case of younger children. Further investigations with six- and seven-year-olds proved that even socialized speech at that age is not entirely free of egocentric thinking. Furthermore, besides his expressed thoughts the child has a great many unexpressed thoughts. Some of these, according to Piaget, remain unexpressed precisely because they are egocentric, i.e., incommunicable. To convey them to others the child would have to be able to adopt their point of view. "One might say that an adult thinks socially even when he is alone, and a child under seven thinks and speaks egocentrically even in the society of others" [*Language and Thought in the Child*, p. 56]. Thus the coefficient of egocentric thought must be much higher than the coefficient of egocentric speech. But it is the data on speech, which can be measured, that furnish the documentary proof on which Piaget bases his

conception of child egocentrism. His explanations of egocentric speech and of child egocentrism in general are identical.

In the first place, there is no sustained social life among children of less than 7 or 8; in the second place, the real social language of the child, that is, the language used in the basic activity of children – play – is a language of gestures, movements, and mimicry as much as of words [*Language and Thought in the Child*, p. 56].

When, at the age of seven or eight, the desire to work with others manifests itself, egocentric talk subsides.

In his description of egocentric speech and its developmental fate, Piaget emphasizes that it does not fulfil any realistically useful function in the child's behavior and that it simply atrophies as the child approaches school age. Our own experiments suggest a different conception. We believe that egocentric speech early assumes a very definite and important role in the activity of the child.

In order to determine what causes egocentric talk, what circumstances provoke it, we organized the children's activities in much the same way Piaget did, but we added a series of frustrations and difficulties. For instance, when a child was getting ready to draw, he would suddenly find that there was no paper, or no pencil of the color he needed. In other words, by obstructing his free activity we made him face problems.

We found that in these difficult situations the coefficient of egocentric speech almost doubled, in comparison with Piaget's normal figure for the same age and also in comparison with our figure for children not facing these problems. The child would try to grasp and to remedy the situation in talking to himself: "Where's the pencil? I need a blue pencil. Never mind, I'll draw with the red one and wet it with water; it will become dark and look like blue."

In the same activities without impediments, our coefficient of egocentric talk was even slightly lower than Piaget's. It is legitimate to assume, then, that a disruption in the smooth flow of activity is an important stimulus for egocentric speech. This discovery fits in with two premises to which Piaget himself refers several times in his book. One of them is the so-called law of awareness, which states that an impediment or disturbance in an automatic activity makes the actor aware of that activity. The other premise is that speech is an expression of that process of becoming aware.

Our findings indicate that egocentric speech does not long remain a mere accompaniment to the child's activity. Besides being a means of expression and of release of tension, it soon becomes an instrument of thought in the proper sense – in seeking and planning the solution of a problem. An accident that occurred during one of our experiments provides a good illustration of one way in which egocentric

speech may alter the course of an activity: A child of five and a half was drawing a streetcar when the point of his pencil broke. He tried, nevertheless, to finish the circle of a wheel, pressing down on the pencil very hard, but nothing showed on the paper except a deep colorless line. The child muttered to himself, "It's broken," put aside the pencil, took watercolors instead, and began drawing a *broken* streetcar after an accident, continuing to talk to himself from time to time about the change in his picture. The child's accidentally provoked egocentric utterance so manifestly affected his activity that it is impossible to mistake it for a mere by-product, an accompaniment not interfering with the melody. Our experiments showed highly complex changes in the interrelation of activity and egocentric talk. We observed how egocentric speech at first marked the end result or a turning point in an activity, then was gradually shifted toward the middle and finally to the beginning of the activity, taking on a directing, planning function and raising the child's acts to the level of purposeful behavior. What happens here is similar to the well-known developmental sequence in the naming of drawings. A small child draws first, then decides what it is that he has drawn; at a slightly older age, he names his drawing when it is half done; and finally he decides beforehand what he will draw.

The revised conception of the function of egocentric speech must also influence our conception of its later fate and must be brought to bear on the issue of its disappearance at school age. Experiments can yield indirect evidence but no conclusive answer about the causes of this disappearance. Nevertheless, the data obtained strongly suggest the hypothesis that egocentric speech is a transitional stage in the evolution from vocal to inner speech. The older children in our experiments behaved differently from the younger ones when faced with obstacles. Often the child examined the situation in silence, then found a solution. When asked what he was thinking about, he gave answers that were quite close to the thinking-aloud of the preschooler. This would indicate that the same mental operations that the preschooler carries out through egocentric speech are already relegated to soundless inner speech in the schoolchild.

There is, of course, nothing to this effect in Piaget, who believes that egocentric speech simply dies off. The development of inner speech in the child receives little specific elucidation in his studies. But since inner speech and voiced egocentric speech fulfil the same function, the implication would be that if, as Piaget maintains, egocentric speech precedes socialized speech then inner speech also must precede socialized speech an assumption untenable from the genetic point of view.

The inner speech of the adult represents his "thinking for himself" rather than social adaptation; i.e., it has the same function that egocentric speech has in the child. It also has the same structural characteristics: Out of context, it would be incomprehensible to others because it omits to "mention" what is obvious to the "speaker." These similarities lead us to assume that when egocentric speech

disappears from view it does not simply atrophy but “goes underground,” i.e., turns into inner speech. Our observation that at the age when this change is taking place children facing difficult situations resort now to egocentric speech, now to silent reflection, indicates that the two can be functionally equivalent. It is our hypothesis that the processes of inner speech develop and become stabilized approximately at the beginning of school age and that this causes the quick drop in egocentric speech observed at that stage.

Limited in scope as our findings are, we believe that they help one to see in a new and broader perspective the general direction of the development of speech and thought. In Piaget’s view, the two functions follow a common path, from autistic to socialized speech, from subjective fantasy to the logic of relationships. In the course of this change, the influence of adults is deformed by the psychic processes of the child, but it wins out in the end. The development of thought is, to Piaget, a story of the gradual socialization of deeply intimate, personal, autistic mental states. Even social speech is represented as following, not preceding, egocentric speech.

The hypothesis we propose reverses this course. Let us look at the direction of thought development during one short interval, from the appearance of egocentric speech to its disappearance, in the framework of language development as a whole.

We consider that the total development runs as follows: The primary function of speech, in both children and adults, is communication, social contact. The earliest speech of the child is therefore essentially social. At first it is global and multifunctional; later its functions become differentiated. At a certain age the social speech of the child is quite sharply divided into egocentric and communicative speech. (We prefer to use the term *communicative* for the form of speech that Piaget calls *socialized* as though it had been something else before becoming social. From our point of view, the two forms, communicative and egocentric, are both social, though their functions differ.) Egocentric speech emerges when the child transfers social, collaborative forms of behavior to the sphere of inner-personal psychic functions. The child’s tendency to transfer to his inner processes the behavior patterns that formerly were social is well known to Piaget. He describes in another context how arguments between children give rise to the beginnings of logical reflection. Something similar happens, we believe, when the child starts conversing with himself as he has been doing with others. When circumstances force him to stop and think, he is likely to think aloud. Egocentric speech, splintered off from general social speech, in time leads to inner speech, which serves both autistic and logical thinking.

Egocentric speech as a separate linguistic form is the highly important genetic link in the transition from vocal to inner speech, an intermediate stage between the differentiation of the functions of vocal speech and the final transformation of one part of vocal speech into inner speech. It is this transitional role of egocentric speech

that lends it such great theoretical interest. The whole conception of speech development differs profoundly in accordance with the interpretation given to the role of egocentric speech. Thus our schema of development first social, then egocentric, then inner speech – contrasts both with the traditional behaviorist schema – vocal speech, whisper, inner speech – and with Piaget's sequence – from nonverbal autistic thought through egocentric thought and speech to socialized speech and, logical thinking. In our conception, the true direction of the development of thinking is not from the individual to the socialized, but from the social to the individual.

III

It is not possible within the limits of the present study to evaluate all aspects of Piaget's theory of intellectual development; our interest focuses on his conception of the role of egocentrism in the developmental relationship of language and thought. We shall, however, point out briefly those of his basic theoretical and methodological assumptions which we consider erroneous, as well as the facts he fails to take into account in his characterization of child thinking.

Modern psychology in general, and child psychology in particular, reveal a tendency to combine psychological and philosophical issues. A subject of the German psychologist Ach aptly summarized this trend when he remarked at the end of a session, "But that is experimental philosophy!" And indeed many issues in the complex field of child thinking border on the theory of cognition, on theoretical logic, and on other branches of philosophy. Time and again Piaget inadvertently touches upon one or another of these but with remarkable consistency checks himself and breaks off. Yet in spite of his express intention to avoid theorizing, he does not succeed in keeping his work within the bounds of pure factual science. Deliberate avoidance of philosophy is itself a philosophy, and one that may involve its proponents in many inconsistencies. An example of this is Piaget's view of the place of causal explanation in science.

Piaget attempts to refrain from considering causes in presenting his findings. In doing so, he comes dangerously close to what he calls, in the child, "precausality," though he himself may view his abstention as a sophisticated "supracausal" stage, in which the concept of causality has been outgrown. He proposes to replace the explanation of phenomena in terms of cause and effect by a genetic analysis in terms of temporal sequence and by the application of a mathematically conceived formula of the functional interdependence of phenomena. In the case of two interdependent phenomena, A and B, A may be viewed as a function of B, or B as a function of A. The investigator reserves the right to organize his description of the data in the way that best suits his purpose at the time, although he will usually give preferential position

to the earlier developmental phenomena as being more explanatory in the genetic sense.

This substitution of the functional for the causal interpretation deprives the concept of development of any real content. Even though Piaget, in discussing the biological and the social factors, acknowledges that the student of mental development is duty-bound to explain the relation between them and to neglect neither, his solution is as follows:

But, to begin, it is necessary to choose one of the idioms to the disadvantage of the other. We have chosen the sociological idiom, but we emphasize that there is nothing exclusive about this – we reserve the right to return to the biological explanation of child thought and to translate into its terms the description we are attempting here [*Judgment and Reason in the Child*, p. 266].

This indeed makes Piaget's whole approach a matter of purely arbitrary choice.

The basic framework of Piaget's theory rests on the assumption of a genetic sequence of two opposite forms of mentation which are described by the psychoanalytic theory as serving the pleasure principle and the reality principle. From our point of view, the drive for the satisfaction of needs and the drive for adaptation to reality cannot be considered separate from and opposed to each other. A need can be truly satisfied only through a certain adaptation to reality. Moreover, there is no such thing as adaptation for the sake of adaption; it is always directed by needs. That is a truism inexplicably overlooked by Piaget.

Piaget shares with Freud not only the untenable conception of a pleasure principle preceding a reality principle but also the metaphysical approach which elevates the desire for pleasure from its true status of a biologically important ancillary factor to that of an independent vital force, the prime mover of psychic development. Once he has separated need and pleasure from adaptation to reality, logic forces Piaget to present realistic thought as standing apart from concrete needs, interests, and wishes, as "pure thought" whose function is the search for truth exclusively for its own sake.

Autistic thought – the original opposite of realistic thought in Piaget's scheme – is, – in our opinion, a late development, a result of realistic thought and of its corollary, thinking in concepts, which leads to a degree of autonomy from reality thus permits satisfaction in fantasy of the needs frustrated in life. This conception of autism is consistent with Bleuler's. Autism is one of the effects of the differentiation and polarization of the various functions of thought.

Our experiments brought to the fore another important point overlooked so far: the role of the child's activity in the evolution of his thought processes. We have seen

that egocentric speech is not suspended in a void but is directly related to the child's practical dealings with the real world. We have seen that it enters as a constituent part into the process of rational activity, taking on intelligence, as it were, from the child's incipiently purposeful actions; and that it increasingly serves problem-solving and planning as the child's activities grow more complex. This process is set in motion by the child's actions; the objects he deals with mean reality and shape his thought processes.

In the light of these facts, Piaget's conclusions call for clarification concerning two important points. First, the peculiarities of child thought discussed by Piaget, such as syncretism, do not extend over quite so large an area as Piaget believes. We are inclined to think (and our experiments bear us out) that the child thinks syncretically in matters of which he has no knowledge or experience but does not resort to syncretism in relation to familiar things or things within easy reach of practical checking – and the number of these things depends on the method of education. Also, within syncretism itself we must expect to find some precursors of the future causal conceptions which Piaget himself mentions in passing. The syncretic schemata themselves, despite their fluctuations, lead the child gradually toward adaptation; their usefulness must not be underrated. Sooner or later, through strict selection, reduction, and mutual adaptation, they will be sharpened into excellent tools of investigation in areas where hypotheses are of use.

The second point which calls for reappraisal and limitation is the applicability of Piaget's findings to children in general. His experiments led him to believe that the child was impervious to experience. Piaget draws an analogy which we find illuminating: Primitive man, he says, learns from experience only in a few special, limited cases of practical activity – and he cites as examples of these rare cases agriculture, hunting, and manufacturing things.

But this ephemeral, partial contact with reality does not in the least affect the general trend of his thinking. The same is all the more true of children [*Judgment and Reason in the Child*, pp. 268-269].

We would not call agriculture and hunting negligible contacts with reality in the case of primitive man; they are practically his whole existence. Piaget's view may hold true for the particular group of children he studied, but it is not of universal significance. He himself tells us the cause of the special quality of thinking he observed in his children:

The child never really and truly comes in contact with things, because he does not work. He plays with things, or takes them for granted [*Judgment and Reason in the Child*, p. 269].

The developmental uniformities established by Piaget apply to the given milieu, under the conditions of Piaget's study. They are not laws of nature but are historically

and socially determined. Piaget has already been criticized by Stern for his failure sufficiently to take into account the importance of the social situation and milieu. Whether the child's talk is more egocentric or more social depends not only on his age but also on the surrounding conditions. Piaget observed children at play together in a particular kindergarten, and his coefficients are valid only for this special child milieu. When the children's activity consists entirely of play, it is accompanied by extensive soliloquizing. Stern points out that in a German kindergarten, in which there was more group activity, the coefficient of egocentrism was somewhat lower, and that in the home children's speech tends to be predominantly social at a very early age. If that is true of German children, the difference between Soviet children and Piaget's children in the Geneva kindergarten must be even greater. Piaget admits, in his foreword to the Russian edition of his book, that it is necessary to compare the behavior of children of different social backgrounds to be able to distinguish the social from the individual in their thinking. For this reason he welcomes collaboration with Soviet psychologists. We, too, are convinced that the study of thought development in children from a different social environment, and especially of children who, unlike Piaget's children, work, must lead to results that will permit the formulation of laws having a much wider sphere of application.

The above is an abbreviated version of the preface written by Vygotsky for the Russian edition of Piaget's first two books (Gosizdat, Moscow, 1932).

From: <http://www.marxists.org/archive/vygotsky/works/words/ch02.htm>

Course: Education

23063, Vygotsky, Piaget's Theory of Child Language and Thought, 1932

5455 words